

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
		(K/D or (RELATIVE NEAR2 ROUGHNESS)) near10 (\$plastic or rubber or metal)	USPAT	OR	ON	2002/02/12 18:25
		friction near3 reduc\$	USPAT	OR	ON	2001/08/16 11:30
		drag near3 reduc\$	USPAT	OR	ON	2001/08/16 11:23
L1	313	"k/d"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/16 18:33
L2	7	1 and allen.in.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/16 18:33
L3	356	(166/367).CCLS.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2005/08/16 19:21
L4	244	(166/350).CCLS.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2005/08/16 19:21
L5	529	3 or 4	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/16 19:22
L6	10772	smooth and (surface or coating or fairing) and (marine or fairing or underwater or subsea)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/16 18:38
L7	807	smooth near5 (surface or coating or fairing) same (marine or fairing or underwater or subsea)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/16 18:38
L8	4	7 and ("k/d" or "ks/d" or roughness adj parameter or roughness adj ratio)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/16 19:29
L9	7	6 and ("k/d" or "ks/d" or roughness adj parameter or roughness adj ratio)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/16 19:27

L10	28	("20030213113" "20040175240" "3581449" "4073983" "4398487" "4470722" "5410979" "5421413" "5875728" "6048136" "6092483" "6148751" "6179524" "6196768" "6206614" "6223672" "6227137" "6263824" "6309141" "6551029" "6561734" "6565287" "6571878" "6644894" "6685394" "6695539" "6702026" "6886487").PN.	US-PGPUB; USPAT	OR	ON	2005/08/16 18:57
L11	7	10 and (smooth or ultrasmooth or "k/d")	US-PGPUB; USPAT	OR	ON	2005/08/16 18:57
L12	14	(US-3581449-\$ or US-3660807-\$ or US-4073983-\$ or US-4324194-\$ or US-5020561-\$ or US-5133519-\$ or US-5214244-\$ or US-5254366-\$ or US-6019549-\$ or US-6106927-\$ or US-6183818-\$ or US-6196768-\$ or US-6206614-\$ or US-6223672-\$). did.	USPAT	OR	ON	2005/08/16 19:21
L13	123	(ultrasmooth or "k/d" or "ks/d" or roughness adj parameter or roughness adj ratio) same (cylinder or fairing or coating)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/16 19:58
L14	76	13 and ("k/d" or "ks/d" or roughness adj parameter or roughness adj ratio)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/16 19:38
L15	0	("k/d" or "ks/d" or roughness adj parameter or roughness adj ratio) with "10.sup.-5"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/16 19:34
L16	0	("k/d" or "ks/d" or roughness adj parameter or roughness adj ratio) and "10.sup.-5"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/16 19:34
L17	0	("k/d" or "ks/d" or roughness adj parameter or roughness adj ratio) and "times10.sup.-5"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/16 19:34
L18	0	("k/d" or "ks/d" or roughness adj parameter or roughness adj ratio) and ".times.10.sup.-5"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/16 19:35
L19	0	("k/d" or "ks/d" or roughness adj parameter or roughness adj ratio) and "\$.times.10.sup.-5"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/16 19:36
L20	0	("k/d" or "ks/d" or roughness adj parameter or roughness adj ratio) and "1.0.times.10.sup.-5"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/16 19:37

L21	37990	(166/\$6).CCLS.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2005/08/16 19:38
L22	48750	(405/\$6).CCLS.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2005/08/16 19:38
L23	84799	21 or 22	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/16 19:38
L24	4	23 and 13	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/16 19:38
L25	43981	(114/\$6).CCLS.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2005/08/16 19:59
L26	2	25 and 13	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/16 19:59
S1	29604	"405"/\$	USPAT	OR	ON	2001/08/16 11:20
S2	13	"405"/\$ and VIV and induced	USPAT	OR	ON	2001/08/14 16:22
S3	77	"405"/\$ and Vortex and induced	USPAT	OR	ON	2001/08/14 16:22
S4	77	("405"/\$ and Vortex and induced) or ("405"/\$ and VIV and induced)	USPAT	OR	ON	2001/08/16 15:01
S5	1394	((405/211,212,195.1,216) or (114/243)).CCLS.	USPAT; USOCR	OR	OFF	2001/08/15 08:44
S6	0	("1and(VIVorvortex)").PN.	USPAT; USOCR	OR	OFF	2001/08/15 08:44
S7	45	((("405/211,212,195.1,216") or ("114/243")).CCLS.) and (VIV or vortex)	USPAT	OR	ON	2001/08/15 08:45
S8	10	((("405/211,212,195.1,216") or ("114/243")).CCLS.) and (VIV or vortex)) and smooth	USPAT	OR	ON	2001/08/15 09:15
S9	0	254/412,416,404	USPAT	OR	ON	2001/08/15 09:15
S10	249	(254/412,416,404).CCLS.	USPAT; USOCR	OR	OFF	2001/08/15 09:15
S11	0	("6and(fairingorcylinder)").PN.	USPAT; USOCR	OR	OFF	2001/08/15 09:16
S12	2	((("254/412,416,404").CCLS.) and (fairing or cylinder)	USPAT	OR	ON	2001/08/15 09:16
S13	5	((("254/412,416,404").CCLS.) and smooth	USPAT	OR	ON	2001/08/15 09:17

S14	110	ultra-smooth	USPAT	OR	ON	2001/08/15 09:24
S15	3929	"Reynolds number"	USPAT	OR	ON	2001/08/15 09:38
S16	0	K/D and "peak to trough"	USPAT	OR	ON	2001/08/15 09:25
S17	144	K/D	USPAT	OR	ON	2002/02/12 18:18
S18	5	K/D and roughness	USPAT	OR	ON	2001/08/15 09:27
S19	741	"Reynolds number" and coating	USPAT	OR	ON	2001/08/15 09:32
S20	0	("Reynolds number" and coating) and ultra-smooth	USPAT	OR	ON	2001/08/15 09:32
S21	272	("Reynolds number" and coating) and smooth	USPAT	OR	ON	2001/08/15 09:32
S22	59	((("Reynolds number" and coating) and smooth) and drag	USPAT	OR	ON	2001/08/15 09:33
S23	741	"Reynolds number" and coating	USPAT	OR	ON	2001/08/15 09:38
S24	272	("Reynolds number" and coating) and smooth	USPAT	OR	ON	2001/08/15 09:41
S25	75	((("Reynolds number" and coating) and smooth) and (drag or vortex)	USPAT	OR	ON	2001/08/15 09:44
S26	74952	sleeve and cylinder	USPAT	OR	ON	2001/08/15 09:45
S27	39109	(sleeve and cylinder) and flow	USPAT	OR	ON	2001/08/15 09:45
S28	118	((sleeve and cylinder) and flow) and ((Reynolds or RE) adj number)	USPAT	OR	ON	2001/08/15 09:46
S29	5241	((sleeve and cylinder) and flow) and coating	USPAT	OR	ON	2001/08/15 09:46
S30	27	((((sleeve and cylinder) and flow) and ((Reynolds or RE) adj number)) and (((sleeve and cylinder) and flow) and coating)	USPAT	OR	ON	2001/08/15 09:47
S31	205	Navier-Stokes	USPAT	OR	ON	2001/08/15 09:48
S32	39	Navier-Stokes and coating	USPAT	OR	ON	2001/08/15 10:41
S33	71376	smooth and coating	USPAT	OR	ON	2001/08/15 10:42
S34	203734	flow and cylinder	USPAT	OR	ON	2001/08/15 10:42
S35	102816	flow and sleeve	USPAT	OR	ON	2001/08/15 10:42
S36	17301	drag and friction	USPAT	OR	ON	2001/08/15 10:42
S37	1755	(smooth and coating) and (flow and cylinder) and (flow and sleeve)	USPAT	OR	ON	2001/08/15 10:43
S38	87	((smooth and coating) and (flow and cylinder) and (flow and sleeve)) and (drag and friction)	USPAT	OR	ON	2001/08/15 10:43
S39	7	"5020561"	USPAT	OR	ON	2001/08/15 11:30
S40	1	"2795278".PN.	USPAT	OR	OFF	2001/08/15 11:32
S41	1	"3220874".PN.	USPAT	OR	OFF	2001/08/15 11:32
S42	1	"3855137".PN.	USPAT	OR	OFF	2001/08/15 11:32

S43	1	"3863717".PN.	USPAT	OR	OFF	2001/08/15 11:33
S44	1	"4003393".PN.	USPAT	OR	OFF	2001/08/15 11:33
S45	1	"4254559".PN.	USPAT	OR	OFF	2001/08/15 11:33
S46	1	"4687595".PN.	USPAT	OR	OFF	2001/08/15 11:33
S47	1	"5020561".PN.	USPAT	OR	OFF	2001/08/15 11:33
S48	1	"4527518".PN.	USPAT	OR	OFF	2001/08/15 11:33
S49	1	"4325712".PN.	USPAT	OR	OFF	2001/08/15 11:34
S50	1	"4325397".PN.	USPAT	OR	OFF	2001/08/15 11:34
S51	1	"4310335".PN.	USPAT	OR	OFF	2001/08/15 11:34
S52	1	"4073983".PN.	USPAT	OR	OFF	2001/08/15 11:34
S53	1	"3892252".PN.	USPAT	OR	OFF	2001/08/15 11:34
S54	1	"3736288".PN.	USPAT	OR	OFF	2001/08/15 11:35
S55	1	"3689238".PN.	USPAT	OR	OFF	2001/08/15 11:35
S56	1	"3618624".PN.	USPAT	OR	OFF	2001/08/15 11:36
S57	1	"3132535".PN.	USPAT	OR	OFF	2001/08/15 11:36
S58	1	"2958205".PN.	USPAT	OR	OFF	2001/08/15 11:36
S59	1	"3892252".PN.	USPAT	OR	OFF	2001/08/15 11:36
S60	1	"4073983".PN.	USPAT	OR	OFF	2001/08/15 11:36
S61	1	"3929088".PN.	USPAT	OR	OFF	2001/08/15 11:37
S62	1	"3912517".PN.	USPAT	OR	OFF	2001/08/15 11:37
S63	1	"3808133".PN.	USPAT	OR	OFF	2001/08/15 11:37
S64	1	"3769022".PN.	USPAT	OR	OFF	2001/08/15 11:38
S65	1	"3769022".PN.	USPAT	OR	OFF	2001/08/15 11:38
S66	1	"3762928".PN.	USPAT	OR	OFF	2001/08/15 11:38
S67	1	"3575123".PN.	USPAT	OR	OFF	2001/08/15 11:38
S68	1	"3516835".PN.	USPAT	OR	OFF	2001/08/15 11:39
S69	1	"3037932".PN.	USPAT	OR	OFF	2001/08/15 11:39
S70	1	"2921027".PN.	USPAT	OR	OFF	2001/08/15 11:39
S71	1	"2580036".PN.	USPAT	OR	OFF	2001/08/15 11:39
S72	4	"3581449"	USPAT	OR	ON	2001/08/16 11:23
S73	1	"3245177".PN.	USPAT	OR	OFF	2001/08/16 11:21
S74	1	"3214877".PN.	USPAT	OR	OFF	2001/08/16 11:21
S75	1	"3076533".PN.	USPAT	OR	OFF	2001/08/16 11:21
S76	1	"1016984".PN.	USPAT	OR	OFF	2001/08/16 11:22
S77	1	"0855204".PN.	USPAT	OR	OFF	2001/08/16 11:22
S78	122	"relative roughness"	USPAT	OR	ON	2001/08/16 11:29
S79	215287	friction and surface	USPAT	OR	ON	2001/08/16 11:30
S80	31195	vibration and friction	USPAT	OR	ON	2001/08/16 11:30

S81	42375	(drag near3 reduc\$) or (friction near3 reduc\$)	USPAT	OR	ON	2001/08/16 11:31
S82	4912	((drag near3 reduc\$) or (friction near3 reduc\$)) and (vibration and friction) and (friction and surface)	USPAT	OR	ON	2001/08/16 11:31
S83	2472	((((drag near3 reduc\$) or (friction near3 reduc\$)) and (vibration and friction) and (friction and surface)) and flow	USPAT	OR	ON	2001/08/16 11:31
S84	1086	(((((drag near3 reduc\$) or (friction near3 reduc\$)) and (vibration and friction) and (friction and surface)) and flow) and (smooth or rough)	USPAT	OR	ON	2001/08/16 11:31
S85	296	(((((drag near3 reduc\$) or (friction near3 reduc\$)) and (vibration and friction) and (friction and surface)) and flow) and (smooth or rough)) and (reynolds or Re)	USPAT	OR	ON	2001/08/16 13:43
S86	866	fairing and plastic	USPAT	OR	ON	2001/08/16 13:43
S87	3242	fairing	USPAT	OR	ON	2001/08/16 13:43
S88	314	fairing and "coating"	USPAT	OR	ON	2001/08/16 13:44
S89	4	(fairing and "coating") and (smooth near5 coating)	USPAT	OR	ON	2001/08/16 13:44
S90	139	fairing and "carbon fiber"	USPAT	OR	ON	2001/08/16 13:49
S91	112	fairing and buoyant	USPAT	OR	ON	2001/08/16 13:50
S92	66	(fairing and buoyant) and plastic	USPAT	OR	ON	2001/08/16 13:50
S93	0	(fairing and buoyant) and (smooth near5 coating)	USPAT	OR	ON	2001/08/16 13:50
S94	18	(fairing and buoyant) and (smooth near10 surface)	USPAT	OR	ON	2001/08/16 13:54
S95	18547	Vortex or VIV	USPAT	OR	ON	2001/08/16 13:54
S96	123	"Vortex Induced Vibration" or VIV	USPAT	OR	ON	2001/08/16 14:48
S97	19	("Vortex Induced Vibration" or VIV) and smooth	USPAT	OR	ON	2001/08/16 14:01
S98	14	"5410979"	USPAT	OR	ON	2001/08/16 14:02
S99	0	"5410979" and (surface near10 smooth)	USPAT	OR	ON	2001/08/16 14:02
S100	0	"5410979" and carbon	USPAT	OR	ON	2001/08/16 14:03
S101	0	"5410979" and coating	USPAT	OR	ON	2001/08/16 14:03
S102	5	"5410979" and plastic	USPAT	OR	ON	2001/08/16 14:06
S103	12	("Vortex Induced Vibration" or VIV) and friction	USPAT	OR	ON	2001/08/16 14:16

S10 4	56	strake and vibration	USPAT	OR	ON	2001/08/16 14:16
S10 5	25	("Vortex Induced Vibration" or VIV) and (paint or coating)	USPAT	OR	ON	2001/08/16 15:01
S10 6	77	("405"/\$ and Vortex and induced) or ("405"/\$ and VIV and induced)	USPAT	OR	ON	2001/08/16 15:02
S10 7	21	((("405"/\$ and Vortex and induced) or ("405"/\$ and VIV and induced)) and sleeve	USPAT	OR	ON	2001/08/16 15:02
S10 8	6	((("405"/\$ and Vortex and induced) or ("405"/\$ and VIV and induced)) and sleeve) and cylindrical	USPAT	OR	ON	2001/08/16 15:02
S10 9	1	"5722797".PN.	USPAT	OR	OFF	2001/08/16 17:38
S11 0	1	"5722492".PN.	USPAT	OR	OFF	2001/08/16 17:39
S11 1	1	"5683206".PN.	USPAT	OR	OFF	2001/08/16 17:39
S11 2	1	"5558467".PN.	USPAT	OR	OFF	2001/08/16 17:40
S11 3	1	"4740109".PN.	USPAT	OR	OFF	2001/08/16 17:40
S11 4	1	"4703709".PN.	USPAT	OR	OFF	2001/08/16 17:41
S11 5	1	"4185694".PN.	USPAT	OR	OFF	2001/08/16 17:41
S11 6	1	"3572041".PN.	USPAT	OR	OFF	2001/08/16 17:42
S11 7	1	"3500783".PN.	USPAT	OR	OFF	2001/08/16 17:42
S11 8	1	"3572041".PN.	USPAT	OR	OFF	2001/08/16 17:42
S11 9	871	rough\$5 near3 pipe	USPAT	OR	ON	2002/02/12 18:11
S12 0	935	rough\$5 near3 (pipe OR RISER)	USPAT	OR	ON	2002/02/12 18:11
S12 1	93	(rough\$5 near3 (pipe OR RISER)) AND (EXTERIOR near3 (pipe OR RISER))	USPAT	OR	ON	2002/02/12 18:12
S12 2	10	(rough\$5 near3 (pipe OR RISER)) AND (RELATIVE NEAR2 ROUGHNESS)	USPAT	OR	ON	2002/02/12 18:18
S12 3	142	(rough\$5 near3 (pipe OR RISER)) AND ((outside near2 diameter) or (OD near3 pipe))	USPAT	OR	ON	2002/02/12 18:16

S12 4	1	((rough\$5 near3 (pipe OR RISER)) AND ((outside near2 diameter) or (OD near3 pipe))) AND (RELATIVE NEAR2 ROUGHNESS)	USPAT	OR	ON	2002/02/12 18:17
S12 5	0	((rough\$5 near3 (pipe OR RISER)) AND ((outside near2 diameter) or (OD near3 pipe))) AND (K/D)	USPAT	OR	ON	2002/02/12 18:17
S12 6	149	K/D	USPAT	OR	ON	2002/02/12 18:18
S12 7	282	RELATIVE NEAR2 ROUGHNESS	USPAT	OR	ON	2002/02/12 18:18
S12 8	430	K/D or (RELATIVE NEAR2 ROUGHNESS)	USPAT	OR	ON	2002/02/12 18:21
S12 9	31	(K/D or (RELATIVE NEAR2 ROUGHNESS)) and ((outside near2 diameter) or (OD near2 pipe))	USPAT	OR	ON	2002/02/12 18:19
S13 0	104	(K/D or (RELATIVE NEAR2 ROUGHNESS)) and plastic	USPAT	OR	ON	2002/02/12 18:21
S13 1	1	(K/D or (RELATIVE NEAR2 ROUGHNESS)) near4 plastic	USPAT	OR	ON	2002/02/12 18:23
S13 2	1	(K/D or (RELATIVE NEAR2 ROUGHNESS)) near10 plastic	USPAT	OR	ON	2002/02/12 18:23
S13 3	5	(K/D or (RELATIVE NEAR2 ROUGHNESS)) near10 (thermoplastic or rubber or metal)	USPAT	OR	ON	2002/02/12 18:25
S13 4	1	"k/D" and VIV	USPAT	OR	ON	2003/09/10 21:41
S13 5	24	("3581449" "3768842" "4021589" "4073983" "4176986" "4239417" "4332509" "4398487" "4470722" "4634314" "4636114" "4646840" "4909327" "5259701" "5330294" "5421413" "6019549" "6048136" "6148751" "6179524" "6206614" "6223672" "6257337" "6401646").PN.	USPAT	OR	ON	2003/09/10 21:44
S13 6	5	((("3581449" "3768842" "4021589" "4073983" "4176986" "4239417" "4332509" "4398487" "4470722" "4634314" "4636114" "4646840" "4909327" "5259701" "5330294" "5421413" "6019549" "6048136" "6148751" "6179524" "6206614" "6223672" "6257337" "6401646").PN.) and smooth\$4	USPAT	OR	ON	2003/09/10 21:44
S13 7	162	"k/D"	USPAT	OR	ON	2003/09/10 21:47

S13 8	134	VIV	USPAT	OR	ON	2003/09/10 21:50
S13 9	460	vortex with vibration	USPAT	OR	ON	2003/09/10 21:50
S14 0	570	VIV or (vortex with vibration)	USPAT	OR	ON	2003/09/10 21:50
S14 1	308	(VIV or (vortex with vibration)) and (viv or vortex or vibration) same (reduc\$3 or minimiz\$3)	USPAT	OR	ON	2003/09/10 21:51
S14 2	65	((VIV or (vortex with vibration)) and (viv or vortex or vibration) same (reduc\$3 or minimiz\$3)) and (viv or vortex or vibration) same (smooth or rough or roughness or smoothness or peak or trough)	USPAT	OR	ON	2003/09/10 21:53
S14 3	2	"6571878"	USPAT	OR	ON	2004/08/19 22:44
S14 7	318	"k/d" or "ks/d"	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/09 21:38
S14 9	5	S147 and (viv or vortex near5 vibration)	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	ON	2005/08/09 21:39
S15 0	0	10/341127	USPAT	OR	ON	2005/08/10 14:18
S15 1	0	"20030161680"	USPAT	OR	ON	2005/08/10 14:19
S15 3	2	("4112815").PN.	US-PGPUB; USPAT; EPO; JPO; DERWENT	OR	OFF	2005/08/16 18:36